

What is claimed is:

1. A compressor having an interior refrigerant passage,
wherein the refrigerant gas is supplied to the interior
5 refrigerant passage from an external refrigerant circuit,
said compressor comprising:

a housing;

a cylinder bore disposed in the housing;

a first chamber disposed in the housing and
10 communicating to the cylinder bore;

a second chamber disposed in the housing, said second
chamber being partitioned from the first chamber in an air
tight manner;

a piston movably located in the cylinder bore;

15 a drive mechanism disposed in the first chamber to move
the piston;

a motor disposed in the second chamber to drive the
drive mechanism; and

a refrigerant path connecting the second chamber with
20 the interior refrigerant passage.

2. The compressor according to claim 1 further comprising
a projection formed with an outer surface of the housing,
wherein said refrigerant path partially extends within the
25 projection for a heat exchange of the refrigerant gas with
the ambient air.

3 The compressor according to claim 1, wherein the drive
mechanism includes a drive shaft extending in the first
30 chamber and the second chamber with maintaining the air tight
separation of the chambers, wherein the drive shaft transmits
torque of the motor to the piston and wherein the refrigerant
path extends within the drive shaft.

4. The compressor according to claim 1, wherein the drive mechanism includes a drive shaft extending in the first chamber and the second chamber and a swash plate mounted on the drive shaft, wherein drive shaft has an end coupled to the motor in the second chamber, and wherein the swash plate is coupled to the piston to drive the piston with the torque of the motor.

5. The compressor according to claim 1, wherein the refrigerant gas introduced to the compressor is partially lead to the cylinder bore via the second chamber, the refrigerant path and the interior refrigerant passage.

6. The compressor according to claim 1, wherein the refrigerant gas introduced to the compressor is entirely lead to the cylinder bore via the second chamber, the refrigerant path and the interior refrigerant passage.

7. The compressor according to claim 1, wherein the refrigerant gas compressed in the compressor and directed toward the external refrigerant circuit is lead to the second chamber via the refrigerant passage.

8. A compressor for compressing refrigerant that is circulated in an external refrigerant circuit, wherein refrigerant is compressed, condensed, expanded and evaporated, the compressor comprising:

a housing having a first chamber and a second chamber, which are separated in an air tight manner;

a refrigerant compressing mechanism including a plurality of cylinder bores, said cylinder bores being arranged from an upstream position to a downstream position

with respect to a flow direction of the refrigerant in the compressor, a plurality of pistons, each located in one of the cylinder bores, at least one intermediate chamber connecting two of the cylinder bores with each other, a suction chamber communicating with the most upstream cylinder bore, a discharge chamber communicating with the most downstream cylinder bore, and a drive mechanism located in the first chamber for driving the pistons;

an electric motor accommodated in the second chamber for driving the drive mechanism;

a first conduit for conducting refrigerant from the external refrigerant circuit to the second chamber;

a first refrigerant path for conducting refrigerant from the second chamber to the suction chamber; and

a second conduit for conducting compressed refrigerant from the refrigerant compressing mechanism to the external refrigerant circuit.

9. The compressor according to claim 8, wherein the first refrigerant path has a first end that opens to the second chamber, and a second end that opens to the suction chamber, and wherein the drive mechanism includes a drive shaft extending between the first chamber and the second chamber.

10. The compressor according to claim 8, further comprising a third conduit for conducting the refrigerant to the suction chamber from the external refrigerant circuit.

11. The compressor according to claim 8, further comprising a second refrigerant path connecting the intermediate chamber with the second chamber.

12. The compressor according to claim 8 further comprising

a projection formed with an outer surface of the housing, wherein at least one of said refrigerant paths extends within the projection for a heat exchange of the refrigerant gas with the ambient air.

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13 The compressor according to claim 8, wherein the drive mechanism includes a drive shaft extending in the first chamber and the second chamber with maintaining the air tight separation of the chambers, wherein the drive shaft transmits torque of the motor to the pistons and wherein the second refrigerant path extends within the drive shaft.

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14. The compressor according to claim 8, wherein the drive mechanism includes a drive shaft extending in the first chamber and the second chamber and a swash plate mounted on the drive shaft, wherein drive shaft has an end coupled to the motor in the second chamber, and wherein the swash plate is coupled to the pistons to drive the pistons based on the torque of the motor.

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15. The compressor according to claim 8, wherein the refrigerant gas introduced to the compressor is partially lead to the cylinder bore via the second chamber and the refrigerant paths.

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16. The compressor according to claim 8, wherein the refrigerant gas introduced to the compressor is entirely lead to the cylinder bore via the second chamber and the refrigerant paths.